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Stanford MEDICINE | Health Care

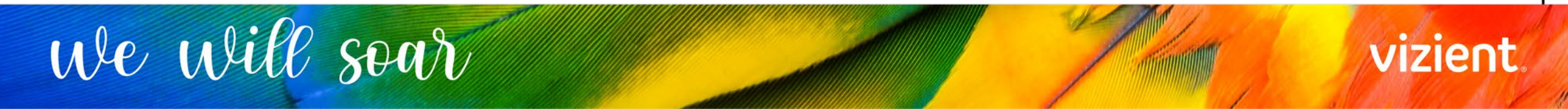
STAT: Stanford's Telemedicine Low-Acuity Track for Emergency Department Visits

Sam Shen, MD, MBA, Professor, Emergency Medicine; Associate Chief Quality Officer

Patrice Callagy, RN, MPH, MSN, CEN, Executive Director, Emergency Services

Meagan Moyer, MPH, RDN, Digital Health Operations Consultant

Stanford Health Care



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Learning Objectives

- Describe key components of designing and implementing a virtual ED fast track program.
- Outline the benefits and patient care quality outcomes that may result from a virtual fast track program.
- Identify opportunities to leverage digital health technology to improve quality outcomes and extend physician and capacity resources.

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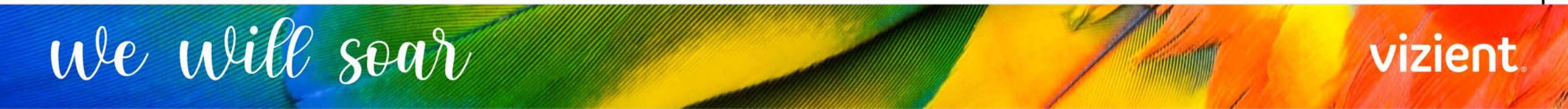
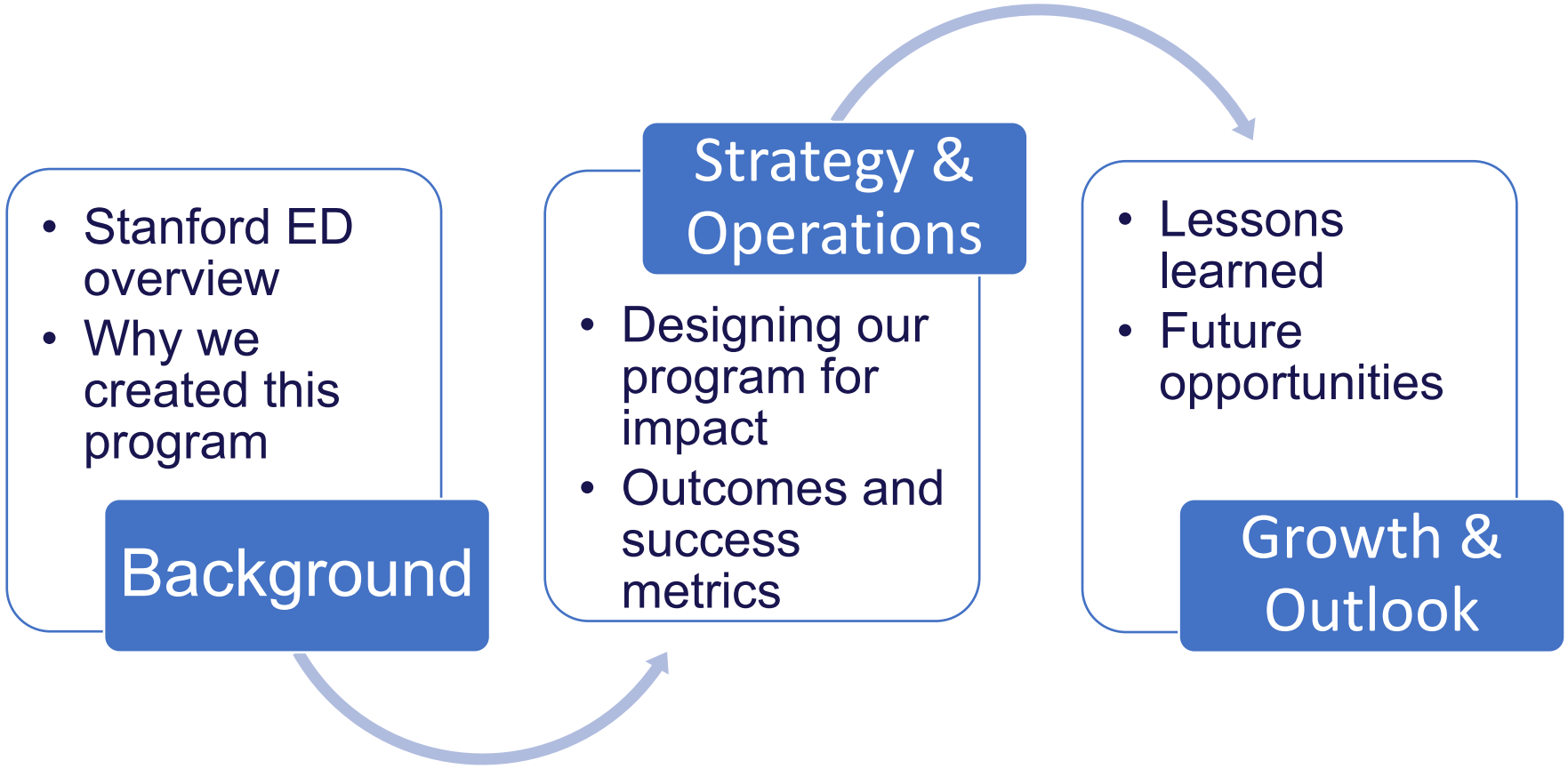


Today's Discussion



Stanford Health Care Emergency Medicine

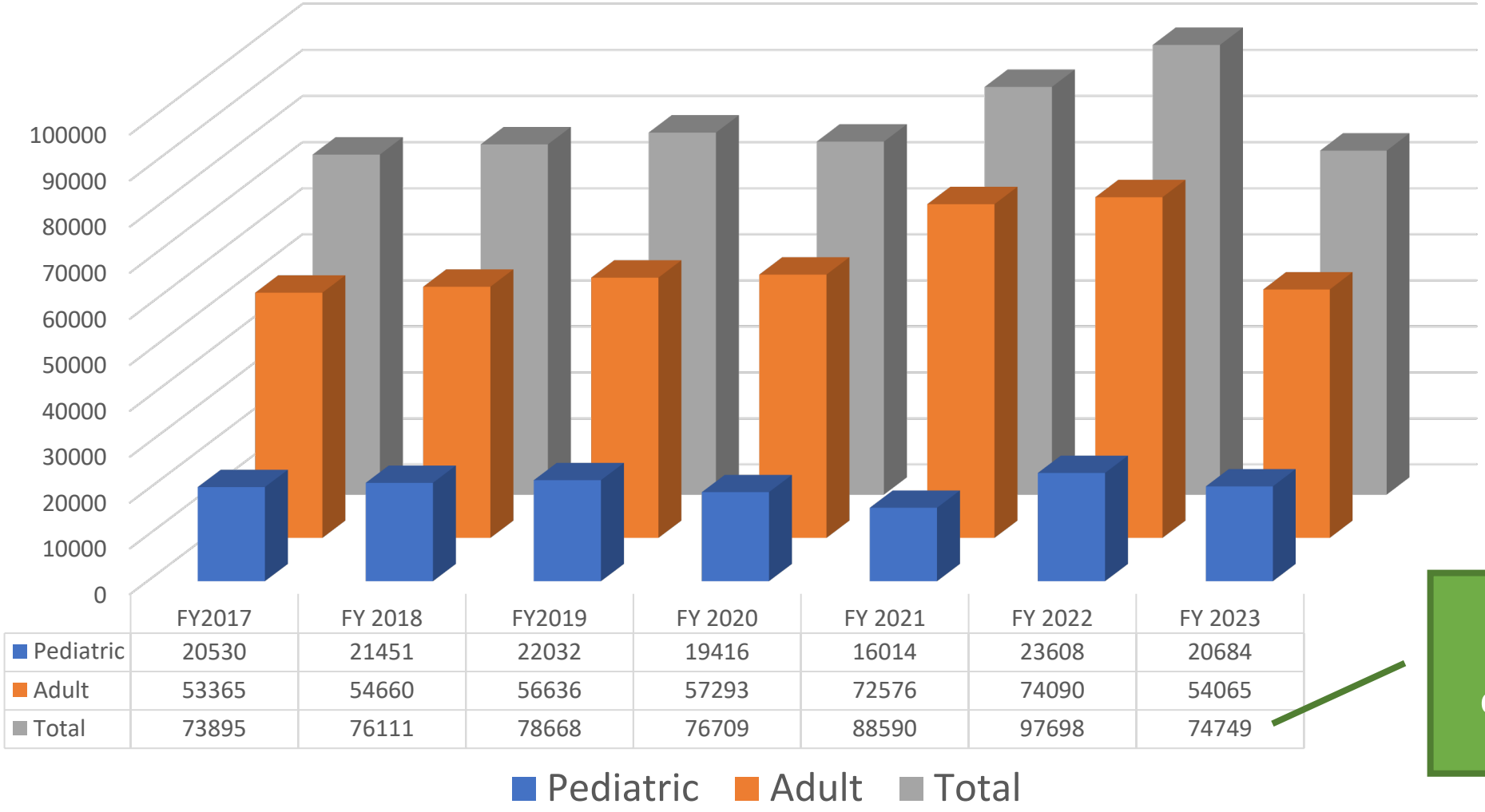
"Transforming healthcare for all by leading in the **advancement** of emergency medicine through **innovation** and scientific discovery."

Level I Trauma Center	Operate **2** EDs: Adult and Pediatric	**70,000+** adult patients yearly	**20,000+** pediatric patients yearly	**80** full-time faculty physicians	**66** adult and **15** pediatric ED beds

EM residency and 13 fellowships	**12.7**% ESI 4-5 (Low Acuity Pts)	**31%** ED patients admitted to inpatient	Comprehensive Stroke and Chest Pain Center	Level 2 Geriatric ED

Data as of April 2023

ED volumes increasing over time



	FY2017	FY 2018	FY2019	FY 2020	FY 2021	FY 2022	FY 2023
Pediatric	20530	21451	22032	19416	16014	23608	20684
Adult	53365	54660	56636	57293	72576	74090	54065
Total	73895	76111	78668	76709	88590	97698	74749

Projected >100,000 combined ED visits FY23

Designing our ED Virtual Fast Track Program

ED patients are prioritized for bed availability by acuity (ESI), leading to **longer wait times** for less urgent needs.

EDs commonly create Fast Track programs deliver timely care. In 2019, proposal to **convert adult and pediatric** EDs to a Virtual Fast Track program.

Program goals included ED **length of stay reduction** (throughput) and overcrowding. Infection control and PPE usage were also important outcomes.

Leveraged Health IT resources to create **novel processes** that allows for **extension of physician resources** and multi-site care.

Virtual fast track zone in ED lobby

Identifying patients for virtual fast track

Adult Emergency Department

INCLUSION:
- All ESI 5, 4, and 3 patients except clinical presentations in Exclusion list

EXCLUSION:
- Patient over 70 years old
- Vision complaints
- Altered mental status
- Breast, genital, groin or rectal exams
- New neurologic abnormalities
- Critically abnormal vital signs or EKG

Pediatric Emergency Department

INCLUSION:
- ESI 4 and 5 patients

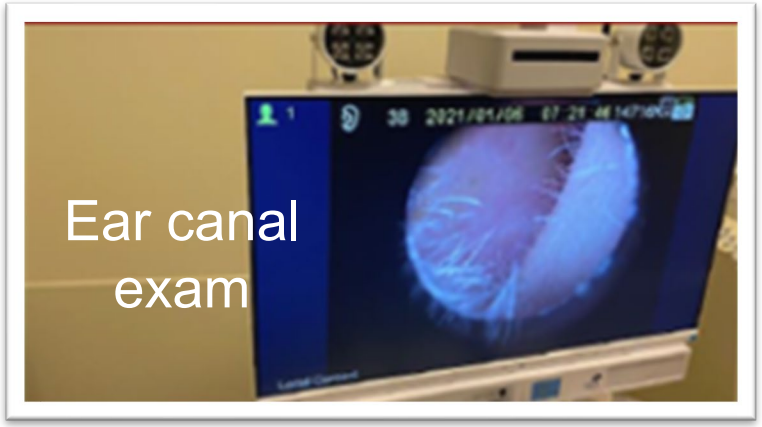
Patients do not need to be quick evaluations.

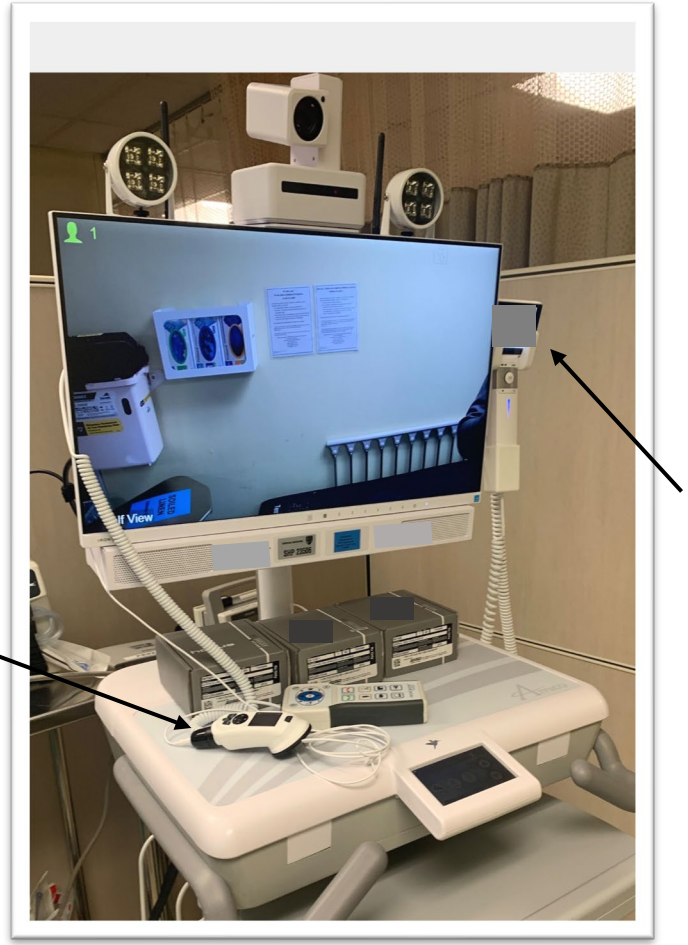
It is okay if patients require higher level of care within the ED. Discuss with RSN to move patient to room as appropriate.

EXCLUSION:
- Less than 2 years of age
- Likely to need procedures, lab work, special equipment
- Need to be observed *(oral intake trial, mild head injury, etc.)*
- Sent in by an outside physician or service
- Were in the ED within 7 days
- Has “violent patient” flag, SCAN team needs, or psych eval
- Medically complex

Technical solutions for patients and physicians

Telemedicine MD workstation





*Permission granted for pictures

Top 10 Video Visit Chief Complaints

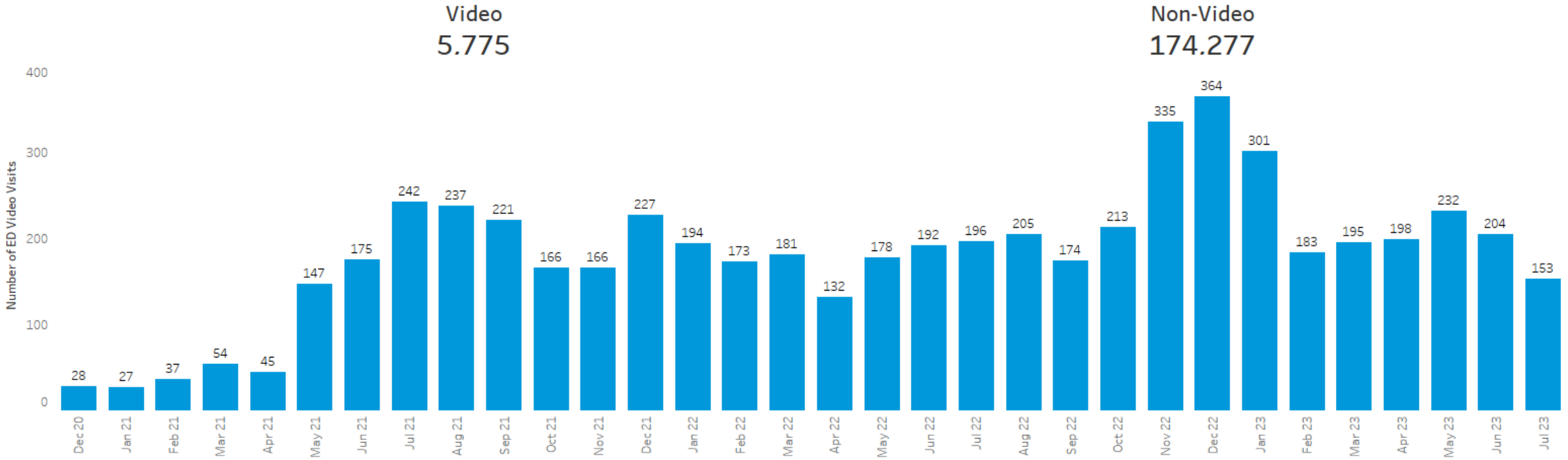
Adult patients triaged to Virtual Fast Track since Dec 2020

1	Sore throat (ESI 4)
2	Chest pain (ESI 3)
3	Cough (ESI 4)
4	Abdominal pain (ESI 3)
5	Back pain (ESI 4)
6	Rash (ESI 4)
7	Knee pain (ESI 4)
8	Ear pain (ESI 4)
9	Back pain (ESI 3)
10	Foot pain (ESI 4)

- ✓ Not just “minor illnesses”
- ✓ Expansion of scope to higher complexity patients

Demonstrating Impact of Intervention

Definitions



✓ *Real time monitoring of metrics*

✓ *Project management tool to improve outcomes and iterate workflows.*

Improving Patient Throughput

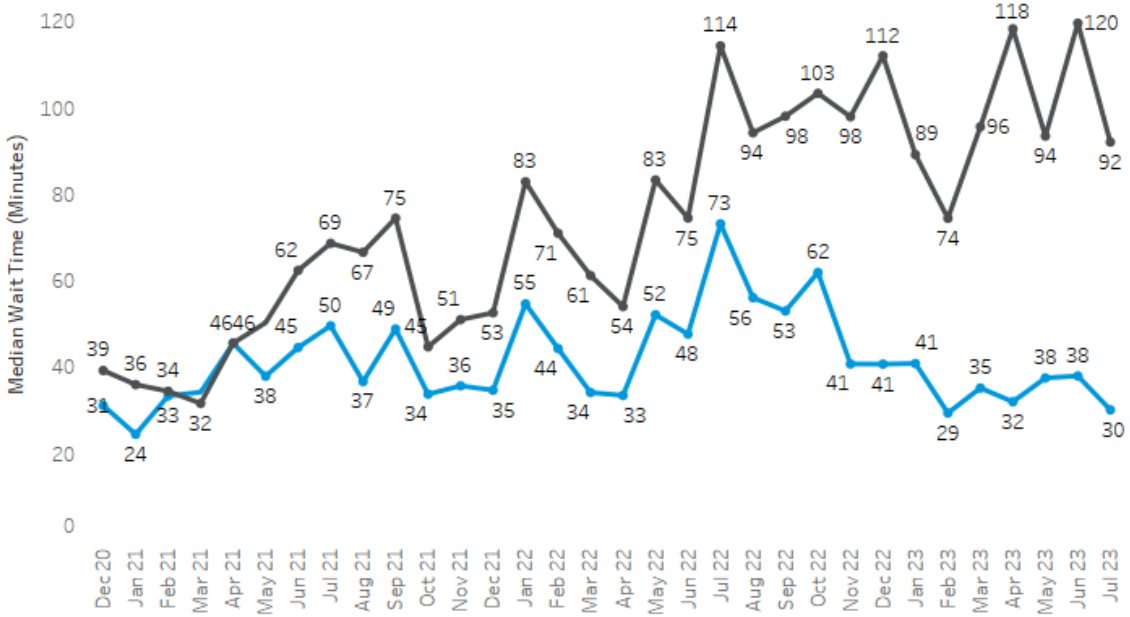
Virtual fast track results in decreased overall patient time spent in ED

Definitions

ED Median Wait Times (Minutes)
(12/1/2020 - 7/31/2023)

Video
41 min(s)

Non-Video
71 min(s)

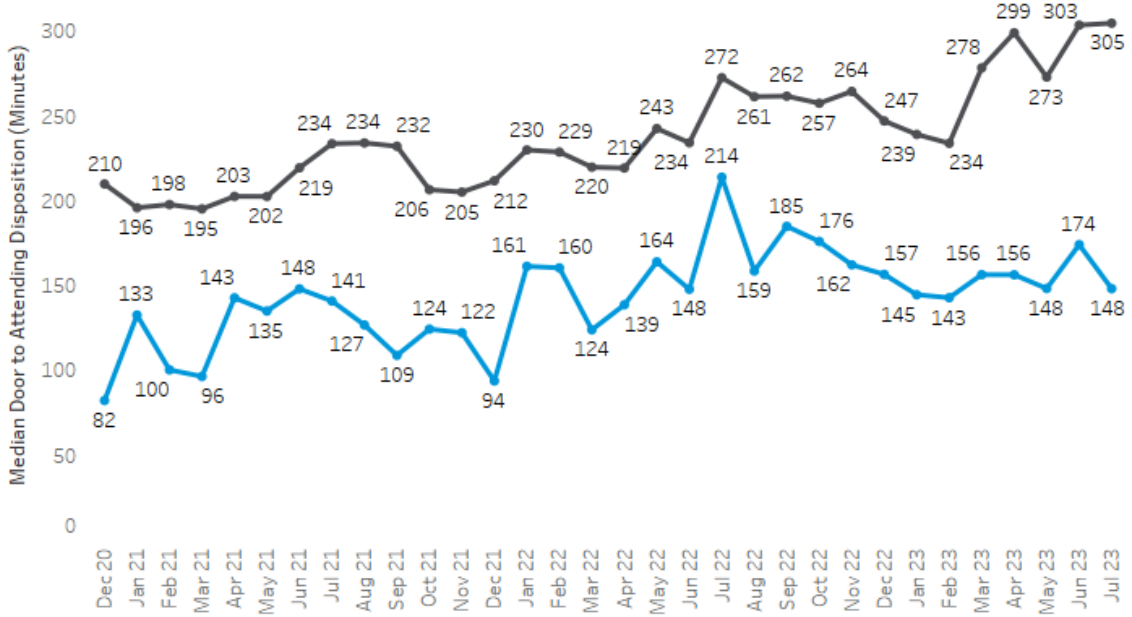


ED Median Door to Attending Disposition (Minutes)
(12/1/2020 - 7/31/2023)

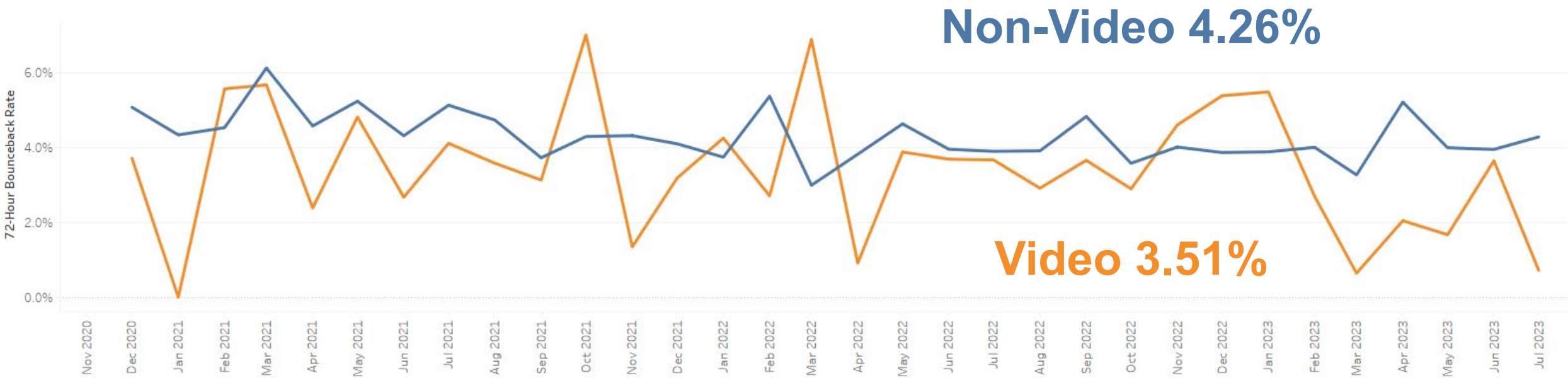
Non-Video
Video

Video
146 min(s)

Non-Video
238 min(s)

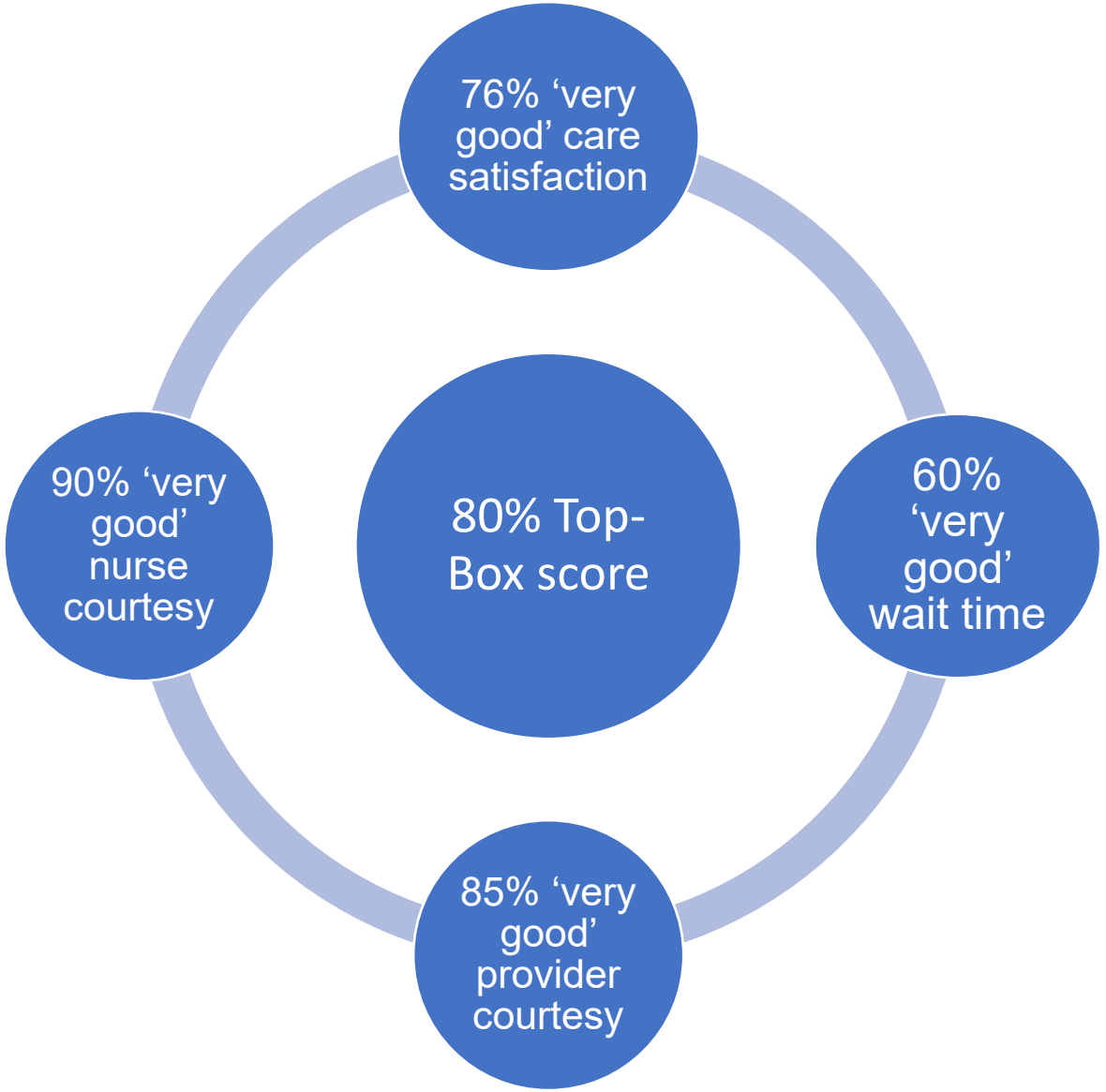


Lower 72-hour ED Return Rates for Virtual Fast Track Patients

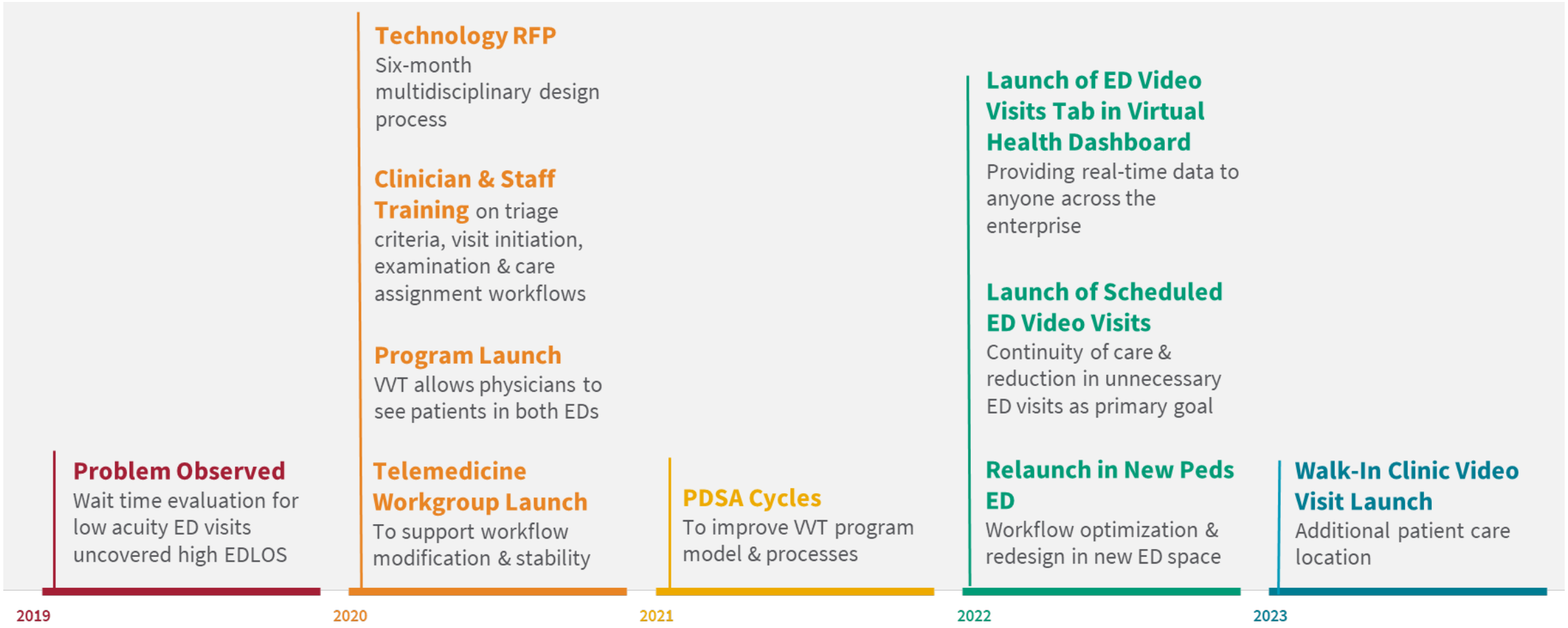


Data: Virtual fast track patients and traditional ED adult patients' 72-hour Bounceback rates for ESI 3, 4, and 5, Dec 2020 – July 2023

Positive patient feedback for ED virtual care



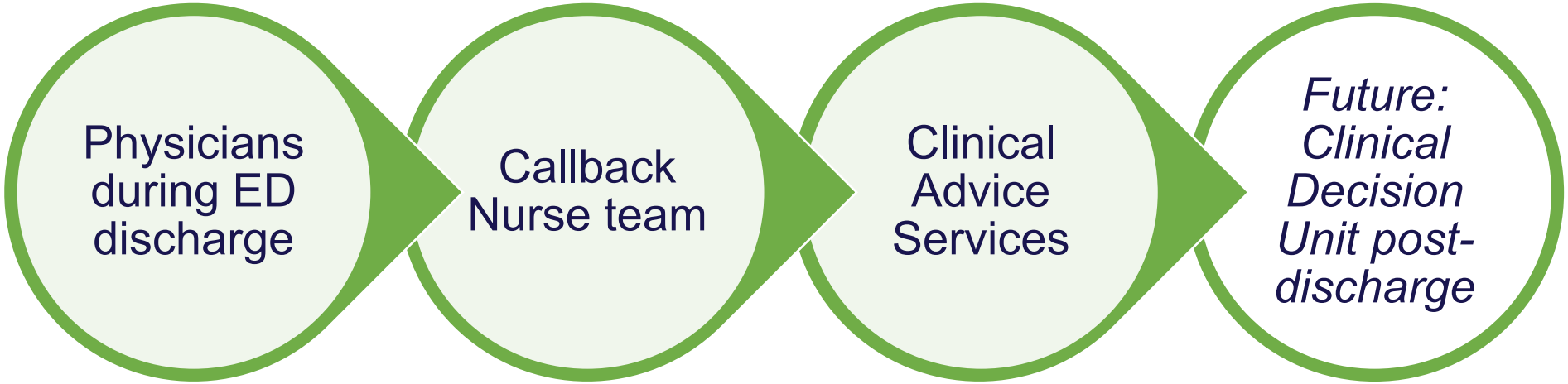
Emergency medicine virtual care expansion



Expanding Care Beyond the ED

Preventing unnecessary admissions

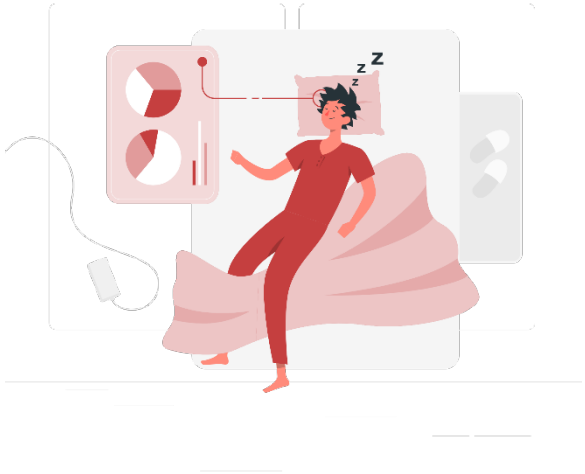
Solution: scheduled video visit with telemedicine ED physician for urgent medical needs



Future Telehealth Opportunities

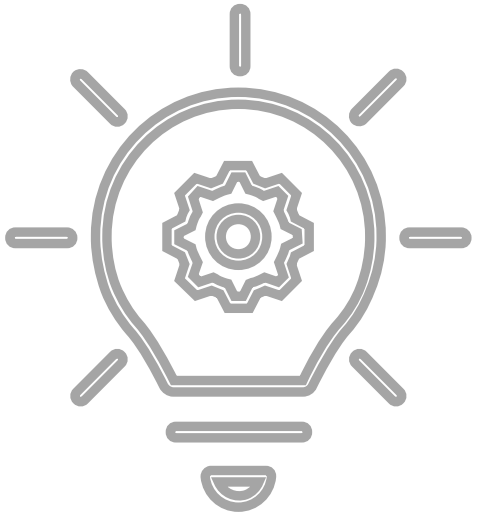
On Site Care

Remote Monitoring



Virtual Care outside ED

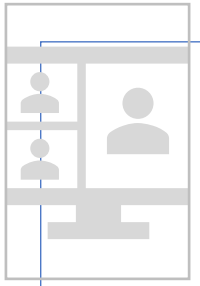
Virtual fast track lessons learned



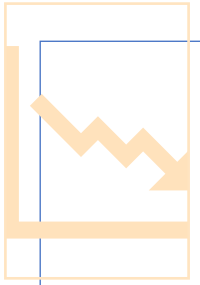
- MD and RN triage criteria alignment important
- Dedicated tele-presenter role improves patient flow and efficiency
- Communicate and inform patients on expectations for better acceptance
- Set metrics early, measure often and iterate on outcomes
- Continuous improvement efforts needed to optimize program

Key Takeaways

Increasing ED crowding requires innovative approaches for managing patient flow and capacity

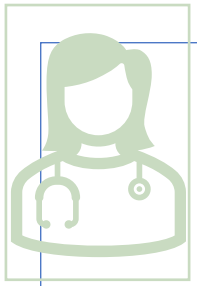


Telemedicine is a safe and effective tool to address low acuity ED population



Virtual Visit track can reduce length of stay and door to physician time while not compromising patient satisfaction or return rate

Multi-disciplinary approach from design to implementation is critical for success



Telemedicine can help scale the physician resource across multiple sites

Questions?

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